

REMARKS

In response to the Office Action mailed March 11, 2005, applicants respectfully requests reconsideration.

Summary of Telephone Conference with Examiner

Applicants' attorney appreciates the courtesies extended by Examiner Nguyen in the telephone conference of June 16, 2005.

In the telephone conference, the Examiner's reasoning behind the rejection of claim 1 under 103(a) was discussed. Examiner Nguyen explained that it would have been obvious to make the +V voltage in Fig. 2 of Bloomer a voltage proportional to the voltage across load 11. Applicants respectfully disagree, as will be discussed in further detail below

Rejections Under 35 U.S.C. §103

Claims 1 and 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bloomer (U.S. 4,620,258). Applicants respectfully request reconsideration.

1. Discussion of Bloomer (U.S. 4,620,258)

Bloomer is directed to a circuit for self-commutated turn-off of latched devices. In some circumstances, an IGT switch may become latched, in that parasitic transistors in the IGT structure may latch into conduction despite the reduction of the gate voltage (Col. 1, lines 21-26). Either the load or the IGT switching device may be destroyed by the excessive power dissipated during the excessive current conduction time introduced by latching of the IGT power switching device (Col. 1 line 66 – Col. 2 line 2).

FIG. 2a of Bloomer shows two comparators 14-1 and 14-2 having non-inverting inputs connected to a voltage V+. Bloomer recites (col. 3 lines 54-68) that, "The input 14b voltage must be some predetermined value associated with device 10' actually being in the turned-off condition. I have utilized the positive circuit operating potential +V, e.g., a +15 volt operating potential, for the reference signal at input 14b, as the forward, or saturated, voltage drop between terminals 10'a and 10'b of a 'turned-on' device 10' should never exceed this level. Thus, the

first comparator output 14c will have a voltage thereat which is a high, logic 1 level if the comparator first input 14a voltage, being the switching device controlled-circuit voltage, is less than the +V magnitude (indicative of a turned-on device) and will have a low, or logic 0, level thereat if the voltage at input 14a exceeds the +V voltage, indicative of the device 10' being in the turned off condition.”

Comparators 14-1 and 14-2 provide a logic signal (14-1c and 14-2c, respectively) that indicates whether a respective IGT device (10'-1 or 10'-2) is turned on or turned off. If the voltage on the inverting input 14-1 of a comparator is less than the +V voltage, the comparator has an output of logic 1 indicating that the respective IGT device is turned on. If the voltage on the inverting input 14-1 of a comparator is greater than the +V voltage, the comparator has an output of logic 0 indicating that the respective IGT device is turned off. Thus, the +V voltage is a threshold for determining whether an IGT device is turned on or turned off. Bloomer has chosen the +V voltage to be 15 volts.

FIG. 2 of Bloomer also shows a load 11 in series with an A.C. source 12.

2. The Rejection of Claim 1 under 103(a) is Improper and Should be Withdrawn

To establish a *prima facie* case of obviousness, there must be some motivation the reference or to combine reference teachings. There must be also be a reasonable expectation of success (MPEP §2142). Applicants believe that the Office Action has not provided the required motivation, and that such a combination would render the Bloomer circuit inoperative for its intended purpose.

The Office Action contends that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate at least one resistive element introducing a voltage drop between a first one of the terminals of the element [11] and said read inputs into the system of Bloomer because getting a voltage divider (By the ratio of resistance) to obtain a desired voltage is a principle of Ohm law and because Bloomer taught that (Column 3, lines 54-68) the threshold voltage must be some predetermined value associated with device in the turn off condition.”

As recited above, col. 3, lines 54-68 of Bloomer discuss the function of the +V voltage connected to the non-inverting inputs of the comparators. However, this passage of Bloomer does not provide a motivation for making the +V voltage to be equal to the voltage across the load 11. The load 11 is not mentioned in the passage. Rather, Bloomer states that the V+ voltage should be a predetermined value associated with device 10' when it is turned off.

The Office Action states that getting a voltage divider is a principle of Ohm's law. However, Bloomer provides no motivation for connecting such a voltage divider to the load 11. Furthermore, it is unclear how such a voltage divider would be connected. If such motivation is based upon either knowledge personal to the Examiner or purported "well-known" prior art pursuant to MPEP §2144.03, the Examiner is requested to cite another reference or provide an affidavit supporting the rejection.

Even if there were motivation (which there is not) to incorporate a voltage divider into Bloomer to make the +V voltage proportional to load 11, such a circuit would not function properly in the purpose for which Bloomer is intended. MPEP §2143.01 states that the proposed modification cannot render the prior art (Bloomer) unsatisfactory for its intended purpose.

As discussed above, the +V voltage is a threshold for determining whether an IGT is turned on or turned off. In the Bloomer reference, +V is chosen to be the value 15 volts. If the +V voltage were instead made to be proportional to the voltage across the load 11, the threshold voltage +V would change as the voltage across the load 11 changes. If the threshold voltage +V were to change in such a manner, the comparators of Bloomer would no longer provide an indication of whether the respective IGT devices are turned on or turned off, and the circuit would not function properly. The circuit would no longer be capable of reliably removing the IGT from a latched state because the threshold V+ would be changing.

Further, MPEP §2143.01 states that the proposed modification cannot change the principle of operation of a reference. As the voltage across the load 11 changes, it may take on positive values, negative values, and the value zero volts in response to the changing voltage of the A.C. source. Making the threshold voltage +V to be proportional to such a changing load voltage would provide different thresholds at different times. Clearly, such a changing threshold is contrary to the principle of operation of the Bloomer circuit, for Bloomer states in col. 3, lines

54-56, "The input 14b voltage must be some predetermined value associated with device 10' actually being in the turned-off condition."

Consequently, for at least the reasons discussed above, the Office Action has failed to establish a *prima facie* case obviousness. Therefore, claims 1 and 12 are patentable over Bloomer. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 2-11 depend from claim 1, and claims 12-20 depend from claim 1, and are therefore patentable for at least the reasons discussed above.

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CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,
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